AMENDMENTS TO THE CLAIMS

Pursuant to 37 C.F.R. § 1.121 the following listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Cancelled)

2. (Currently Amended) A packet transmission apparatus comprising:

a plurality of queues;

a packet transmitting ~~means for extracting~~ unit operable to extract a packet from any one of said plurality of queues, ~~and~~ thereby transmitting the extracted packet;

a packet receiving unit operable to receive a packet that has arrived;

a transferring unit operable to transfer the packet received at said packet receiving unit;

a classifying device operable to transfer ~~for transferring an input packet~~ the packet transferred from said transferring unit to any one of said plurality of queues in accordance with a priority of the packet transferred from said transferring unit ~~input packet~~; and

a controlling unit operable to judge whether said plurality of queues is in a congestion state or in a non-congestion state,

~~packet receiving means for receiving a packet that has arrived; and~~

wherein said transferring ~~means~~ <u>unit is further operable to</u> ~~for~~ alternatively ~~transferring~~ <u>transfer</u> the packet received by said packet receiving ~~means~~ <u>unit</u> directly to any one of said plurality of queues in [[a]] <u>the</u> non-congestion state and ~~transferring~~ <u>transfer</u> ~~said~~ <u>the</u> packet received by said packet receiving ~~means~~ <u>unit</u> to said classifying device in [[a]] <u>the</u> congestion state.

3. (Currently Amended) The packet transmission apparatus as set forth in claim 2, wherein said packet transmitting ~~means~~ <u>unit</u> includes ~~means for~~ <u>a</u> referring <u>unit</u> <u>operable to refer</u> to ~~said~~ <u>a</u> priority of each of said plurality of queues and ~~for~~ <u>a</u> transmitting <u>unit operable to transmit</u> a packet from a queue having a higher priority.

4. (Currently Amended) The packet transmission apparatus as set forth in claim 2, wherein said transferring ~~means includes means~~ <u>unit is further operable to transfer</u> <u>the packet received by said packet receiving unit</u> ~~for transferring said packet received~~ ~~by said packet receiving means~~ directly to a queue having the highest priority among said plurality of queues in said non-congestion state.

5. (Currently Amended) The packet transmission apparatus as set forth in claim 2, wherein <u>said controlling unit is operable to judge that said plurality of queues is in</u> <u>the</u> ~~a step proceeds to processing of said~~ congestion state when a queue length of a queue having the highest priority among said plurality of queues is at least a fixed threshold value.

6. (Currently Amended) The packet transmission apparatus as set forth in claim 2, wherein said controlling unit is further operable to judge that said plurality of queues is in the non-congestion state when the priority of each of said plurality of queues is regularly constant[[,]] and ~~in step proceeds to processing of said non-congestion state when~~ all of said plurality of queues are empty.

7. (Currently Amended) The packet transmission apparatus as set forth in claim 2, wherein the control unit is further operable to switch a queue having a highest original priority among said plurality of queues ~~a of a queue having a highest priority prior to being switched among a plurality of queues is switched~~ to a lowest switched priority when ~~an entire~~ the length of ~~all~~ each of said plurality of queues does not exceed a fixed threshold, and[[,]] to judge that said plurality of queues is in the non-congestion state when each of said plurality of ~~all~~ queues except the queue having the lowest switched priority ~~are in this state, a step proceeds to processing of said non-congestion state~~ is empty.

8. (Currently Amended) The packet transmission apparatus as set forth in claim 7, wherein the control unit is further operable to return to the original priority the [[a]] priority of each of said plurality of queues ~~is returned to a state prior to being switched~~ when the control unit transitions ~~a shift is carried out~~ from ~~said~~ the congestion state to ~~said~~ the non-congestion state.

9. (Currently Amended) The packet transmission apparatus as set forth in claim 7, wherein, ~~said transferring unit is further operable to transfer the packet received by said packet receiving unit directly to said queue having said lowest switched priority among said plurality of queues when the~~ ~~in a state where a~~ priority of each of said plurality of queues ~~has been~~ is a switched ~~priority, said transferring means transfers the packet received by said packet receiving means directly to said queue having said lowest priority among said plurality of queues~~.

10. (Currently Amended) A packet transmission ~~transmitting~~ method ~~for receiving and transmitting an arrived packet~~ comprising:

establishing at least first and second queues;

extracting a packet from at least one of the first and second queues, thereby transmitting the extracted packet;

receiving a packet that has arrived;

judging whether at least one of the first and second queues is in a congestion state or in a non-congestion state;

~~determining a congestion stat;~~

~~classifying a priority of said arrived packet when said congestion state exists;~~

transferring alternatively the received ~~said arrived~~ packet directly ~~into a~~ to any one of ~~said~~ the first and second queues ~~based on said priority; and omitting the step of classifying when said congestion state does not exist~~ in the non-congestion state; and

transferring the received packet to any one of the first and second queues by classifying the received packet in accordance with a priority of the packet in the congestion state.

11. (Cancelled)

12. (Currently Amended) The packet transmitting method as set fort in claim 10 ++, further comprising:

referring to a priority of said at least first and second queues to determine a higher priority queue; and

transmitting packets from said higher priority queue.

13. (Currently Amended) The packet transmitting method as set forth in claim 10 ++, wherein in a non-congestion state, directly transferring a received packet to a queue having a highest priority among said at least first and second of queues.

14. (Currently Amended) The packet transmitting method as set forth in claim 10 ++, wherein said judging judges that said at least one of first queue and said second queue is in the congestion state the step of determining a congestion state includes determining when a queue length of a queue having a highest priority among said at least first and second queues contains at least a fixed threshold of packets.

15. (Currently Amended) The packet transmitting method as set forth in claim 10 ~~11~~, wherein ~~the step of determining a congestion state determines a~~ said judging judges the non-congestion state when all of said at least first and second queues are empty.

16. (Currently Amended) The packet transmitting method ~~as set forth in claim 11,~~ ~~further~~ comprising:

establishing at least first and second queues;

extracting a packet from at least one of the first queue and the second queue, thereby transmitting the extracted packet;

receiving a packet that has arrived;

judging whether at least one of the first queue and the second queue is in a congestion state or in a non-congestion state; and

transferring alternatively the received packet directly to any one of the first queue and the second queue in the non-congestion state, and transferring the received packet to any one of the first queue and the second queue by classifying in accordance with a priority of the packet in the congestion state; and

switching a priority of a queue having a highest priority prior to being switched to a lowest priority when an entire length of all of said at least first and second of queues does not exceed a fixed threshold, wherein ~~and,~~ when all queues except said queue having said lowest priority are empty in this state, said judging judges that at least one of said first queue and said second queue is in the ~~step of~~ ~~determining a congestion state determines a~~ non-congestion state.

17. (Currently Amended) The packet transmitting method as set forth in claim 16, wherein a priority of each of said at least first and second queues is returned to a state that existed before being switched when said judging judges ~~the step of determining a congestion state determines~~ the existence of a non-congestion state.

18. (Original) The packet transmitting method as set forth in claim 16, wherein in a state where a priority of each of said at least first and second queues has been switched, transferring a received packet directly to said queue having said lowest priority among said plurality of queues.